

Attachment 1: National Disaster Mitigation Program (NDMP) Project Summary

	Project Name	Start Date	End Date	Account Code	TRCA/Partner Funding	Federal Program Funding	Project Outcomes / Outline
	NDMP INTAKE #1						
1	A4 Flood Vulnerable Database	Oct-16	Complete - Sep-18	10709	\$195,000.00	\$195,000.00	<i>This project generated an updated geospatial database of exposure information, which was layered with riverine flood hazard information and the latest flood vulnerability functions in order to quantify flood risk at a granular level. This allowed for a data-driven risk ranking of TRCA's 41 Flood Vulnerable Clusters in the Flood Risk Assessment and Ranking study. The quantified damage estimates were used to inform Return on Investment calculations for flood remediation projects, and the geospatial mapping products that were developed were used to aid municipal response to flood emergencies. This project also enabled the purchase of LiDAR data that has been leveraged for subsequent floodplain modelling and mapping activities.</i>
2	2 Dimensional Modeling of High Risk - Flood Vulnerable Areas	Oct-16	Complete - Mar-18	10708	\$110,000.00	\$110,000.00	<i>This project developed advanced 2-dimensional flood modelling within two high-risk complex flow areas: Rockcliffe Special Policy Area in Toronto and Pickering/Ajax special Policy Area in Durham Region. This information was used to update regulations, to advance flood remediation plans, and to enhance emergency preparedness.</i>
	NDMP INTAKE #3						
3	A31 2 Dimensional Modeling Studies of High Risk Flood Areas	Oct-17	Complete - Mar-19	10758	\$60,000.00	\$60,000.00	<i>This project provided accurate and reliable modelling updates incorporating recent LiDAR topographic data. The revised flood plain information was provided to TRCA's municipal partners for the purpose of land use and emergency management planning.</i>

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4	A30 2017 Stouffville and Claireville Dam Feasibility Studies	Oct-17	Complete - Sep-19	10710	\$140,000.00	\$140,000.00	<i>This project assessed the viability of implementing the recommendations from the recently completed Dam Safety Reviews for the Claireville and Stouffville Dams located in the City of Brampton, and Town of Whichurch-Stouffville respectively.</i>
5	A27 2017 Floodplain Mapping Updates	Oct-17	Complete Sep-19	10756	\$156,750.00	\$156,750.00	<i>This project included updating approximately 65 floodplain maps for the Humber River Watershed within the City of Toronto and City of Vaughan, as well as the update of approximately 16 floodplain map sheets within the Carruthers Creek Watershed within the Town of Ajax.</i>
6	A28 2017 Mimico Creek Hydrology Update	Oct-17	Complete Mar-19	10755	\$30,000.00	\$30,000.00	<i>This project entailed a comprehensive hydrology update for the Mimico Creek watershed. Mimico Creek has an urbanized watershed located within the Cities of Mississauga and Brampton in the Regional Municipality of Peel and the City of Toronto.</i>
7	A29 2017 Real-Time Gauge Improvement Program	Oct-17	Complete Mar-19	10757	\$60,000.00	\$60,000.00	<i>This project expanded the coverage of TRCA's network of rain and stream gauges through the provision of four additional gauges, as well as redundancy equipment to increase the resilience of the current system. The real-time gauging network provides enhanced situational awareness during flood event which benefits emergency response.</i>
<b>NDMP INTAKE #4</b>							
8	A47 - Flood Risk Community Outreach Program	Jul-18	Complete - Mar-20	10754	\$130,000.00	\$130,000.00	<i>This project enabled targeted flood risk communications initiatives, together with municipal partners, to support flood emergency preparedness. Priority neighbourhoods were based on the results from TRCA's Intake 1 Flood Risk Assessment and Ranking study.</i>

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9	A45 - Don River Watershed Floodplain Mapping Update	Oct-18	Complete - Mar-20	10737	\$130,500.00	\$130,500.00	<i>This project enabled a comprehensive floodplain mapping update of approximately 80 floodplain map sheets within the municipalities of the City of Vaughan, Town of Richmond Hill, City of Markham and City of Toronto.</i>
10	A48 - G. Ross Lord Dam Safety Risk Assessment & Flood Operations	Oct-18	Complete - Mar-20	10757	\$125,000.00	\$125,000.00	<i>The risk assessment allowed TRCA to quantify the impacts of modifying the dam operations relative to overall risk. This project helped provide stakeholders with a better understanding of the dam's risk levels.</i>
11	A49 - Highland Creek Hydrology & Floodplain Mapping	Jul-18	Complete - Mar-20	10753	\$124,000.00	\$124,000.00	<i>This project entailed a comprehensive hydrology model and floodplain mapping update for the Highland Creek watershed within the City of Toronto. The project provided a new hydrology model for the Highland Creek, as well as the update of approximately 30 floodplain map sheets.</i>
12	Mimico Creek Floodplain Mapping Update	Oct-18	Complete - Mar-20	10739	\$31,000.00	\$31,000.00	<i>This project entailed a comprehensive floodplain mapping update of approximately 20 floodplain map sheets within the municipalities of the Cities of Brampton, Mississauga, and Toronto.</i>
13	A51 - Rouge River Watershed Floodplain Mapping	Oct-18	Complete - Mar-20	10738	\$167,000.00	\$167,000.00	<i>This project entailed a comprehensive floodplain mapping update of approximately 103 floodplain map sheets within the municipalities of the City of Toronto, Town of Richmond Hill, City of Markham, City of Pickering and the Town of Whitchurch-Stouffville.</i>

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14	Downtown Brampton Flood Protection EA (Brampton Riverwalk - <b>Partnership with City of Brampton</b> )	Oct-18	Complete - Mar-20	*Funded by City of Brampton	\$1,500,000.00	\$1,500,000.00	<i>In partnership with the City of Brampton, the purpose of this endeavour was to identify a sustainable preferred alternative to eliminate the risk of flooding to Downtown Brampton from the Etobicoke Creek, up to the Regulatory Event (Regional Storm - Hurricane Hazel), while taking into consideration the natural, social, cultural and built environment, and complementing Brampton's Urban Design and Land Use Study Objectives.</i>
15	Toronto Island Flood Characterization and Risk Assessment ( <b>Partnership with City of Toronto Parks</b> )	Oct-18	Complete - Jun-19	*Funded by City of Toronto	\$150,000.00	\$150,000.00	<i>The focus of TRCA's previous risk assessment applications was on riverine flooding, and did not include the Toronto Islands. This flood characterization and risk assessment project helped facilitate an understanding of lake-based flood hazards, community and infrastructure vulnerabilities, potential impacts and risk to residents and municipal assets, which in has been used to inform further structural and non-structural flood mitigation investments. This project was used to inform proactive mitigation and response work in anticipation of high water levels.</i>
NDMP INTAKE #5							
16	Duffins Creek Watershed Floodplain Mapping Update	Apr-19	Complete - Sep-20	10770	\$110,000.00	\$110,000.00	<i>This project entailed an update of approximately 73 floodplain maps for the Duffins Creek watershed within the City of Pickering and Towns of Ajax and Uxbridge in Durham Region, and the City of Markham, and Town of Whitchurch-Stouffville in the Region of York, using new topographic information based on LiDAR, as well as the results from the 2012 Duffins Creek Hydrology Update.</i>

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17	Next Generation Flood Forecasting and Warning System Development	Apr-19	Complete – Mar-20	10774	\$75,000.00	\$75,000.00	<i>This project piloted the development of a next-generation flood forecasting and warning decision support system using Delft-FEWS, which will lay the groundwork for site specific flow forecasting at critical areas, as well as enhanced, real time now-casting.</i>
18	Petticoat Creek Watershed Hydrology Update	Apr-19	Complete – Mar-20	10771	\$40,000.00	\$40,000.00	<i>This project entailed a comprehensive hydrology update of the Petticoat Creek watershed within the City of Pickering in Durham Region. The previous hydrology update was completed in 2005 and was developed using the best available information of the time.</i>
19	Pickering Ajax Dyke Rehabilitation Environment Assessment	Apr-19	Complete – Aug-20	10769	\$250,000.00	\$250,000.00	<i>In April 2018, TRCA completed a study of the flood control infrastructure located within the Pickering and Ajax SPAs within the City of Pickering and Town of Ajax in Durham Region. The study included a number of technical assessments intended to characterize the conditions of the flood control dykes. This project furthered flood protection work through the completion of an Environmental Assessment which identified a preferred dyke restoration plan, balancing flood mitigation requirements with impacts to the environment, social needs, and cost.</i>
20	Flood Emergency Management Plan for the TRCA	Apr-19	Complete – Mar-20	10773	\$50,000.00	\$50,000.00	<i>Building on the Intake 1 flood risk assessment, this project involved the development of comprehensive site-specific flood risk packages to facilitate emergency response actions within select flood vulnerable areas located within the Toronto and Region Conservation Authority jurisdiction. This project also included enhancements to TRCA monitoring sites.</i>

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21	Black Creek at Rockcliffe Special Policy Area Flood Remediation and Transportation Feasibility Study	Apr-19	Complete – Mar-20	10772	\$200,000.00	\$200,000.00	<i>The Rockcliffe Special Policy Area was ranked as having the highest riverine flood risk among TRCA's Flood Vulnerable Clusters. Many of the properties in the area have experienced surface and basement flooding during severe storms, due to riverine flooding and/or overloading of the local sewer systems. TRCA and the City of Toronto have been coordinating efforts to reduce flooding risks in the Rockcliffe area, completing two separate EA studies that examined options to reduce riverine and sewer system related flooding, respectively, in 2014. This study involved the development of flood remediation options that focused on maximizing functional flood protection to the properties at the highest risk of riverine flooding, while assessing transportation, utility, and geomorphic considerations.</i>